

CLAIMS

1. A laminated sheet for molding comprising: a film layer which comprises thermoplastic acrylic resin wherein the film layer is one of transparent or translucent; an intermediate layer which comprises a curable resin including a polyisocyanate compound and an acrylic resin having hydroxyl groups, wherein the curable resin is a cured material in a semi-cured state; and a decorative layer having a mirror-like metallic luster, wherein the decorative layer comprises a binder resin and fine metal grains obtained from a thin metal film; wherein the layers are laminated in the order stated.
2. The laminated sheet for molding according to claim 1, wherein the curable resin includes the polyisocyanate compound and the acrylic resin having hydroxyl groups; the acrylic resin having hydroxyl groups has a glass transition temperature of 70 to 120°C, a hydroxyl value of 10 to 100, and a weight average molecular weight of 10,000 to 200,000; isocyanato groups included in the polyisocyanate compound are in the range of 0.1 to 1.0 equivalent per 1 equivalent of hydroxyl groups in the acrylic resin having hydroxyl groups; and the cured material in a semi-cured state contains remaining unreacted hydroxyl groups and unreacted isocyanato groups.
3. The laminated sheet for molding according to claim 1, wherein the decorative layer is a dried film of a gravure ink including a binder resin and fine metal grains obtained from a thin metal film.
4. The laminated sheet for molding according to claim 1, wherein a substrate layer comprising a thermoplastic resin is further provided on one surface of the decorative layer

wherein the intermediate layer is provided on the other surface.

5. The laminated sheet for molding according to claim 1, wherein the semi-cured state is a state in which the reaction rate of isocyanato groups of the polyisocyanate compound determined by an infrared spectrophotometer is 50 to 80% with respect to a reaction between isocyanato groups in the isocyanate compound and hydroxyl groups in the acrylic resin having hydroxyl groups.

6. The laminated sheet for molding according to claim 1, wherein the softening point of the acrylic resin of the film layer is in the range of 60 to 300°C.

7. The laminated sheet for molding according to claim 2, wherein the hydroxyl value of the acrylic resin having hydroxyl groups is 40 to 100.

8. The laminated sheet for molding according to claim 1, wherein the polyisocyanate compound has two or more isocyanato groups on average in one molecule and has a number average molecular weight of 10,000 or less.

9. The laminated sheet for molding according to claim 1, wherein the thickness of the intermediate layer is 0.1 to 10 μm .

10. The laminated sheet for molding according to claim 1, wherein the decorative layer is a layer wherein the content of fine metal grains based on nonvolatile content included in an ink is 10 to 60% by mass.

11. The laminated sheet for molding according to claim 1, wherein the fine metal grains are grains obtained from a vapor deposited metal thin film of at least one selected from a group consisting of aluminum, gold, silver, copper, brass, titanium, chromium, nickel, nickel chrome, and stainless steel.
12. The laminated sheet for molding according to claim 1, wherein the thickness of the fine metal grains obtained from a thin metal film is 0.01 to 0.1 μm , and the diameter thereof is 5 to 25 μm .
13. The laminated sheet for molding according to claim 1, wherein the film thickness of the decorative layer is 0.05 to 3 μm .
14. A production method of a laminated sheet for molding comprising:
a first step wherein a curable resin including a polyisocyanate compound and an acrylic resin having hydroxyl groups is applied to a thermoplastic acrylic resin film which is one of transparent or translucent;
a second step wherein a coating film obtained by the application in the first step is semi-cured at a temperature of 50°C or less to form an intermediate layer in a semi-cured state; and
a third step wherein a gravure ink including a binder resin and fine metal grains obtained from a thin metal film is printed on the intermediate layer in a semi-cured state obtained in the second step to form a decorative layer with a mirror-like metallic luster.